THE MINISTER OF SCIENCE AND TECHNOLOGY (SHRI KAPIL SIBAL): (a) to (c) There is no Tsunami Warning System in place at present for Indian Ocean region as such. However, Government of India is in the process of setting up an Early Warning System for Tsunami and Storm Surges in the Indian Ocean. Indian National Centre for Ocean Information Services (INCOIS), Hyderabad, has been identified for setting up a Tsunami Warning Centre on a 24x7 basis by the Department of Ocean Development (DOD). Department of Science & Technology (DST), Department of Space (DoS) and Council for Scientific and Industrial Research (CSIR) Laboratories are the major agencies that are involved in the endeavour.

**US Model for Monsoon Prediction**

502. SHRI GIREESH KUMAR SANGHI: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether there has been a discussion with regard to buying US monsoon model for weather prediction;

(b) if so, its status thereof; and

(c) whether its levels of accuracy have been checked in forecasting in India's monsoon conditions?

THE MINISTER OF SCIENCE AND TECHNOLOGY (SHRI KAPIL SIBAL): (a) to (c) No, Sir. There is no proposal to obtain a US monsoon model. However, a 'Weather Research & Forecast' Model has been obtained free of cost from the National Centre for Atmospheric Research (NCAR), USA which will be useful for tropical monsoon forecasts. It is undergoing extensive testing for its suitability through a Forecast Demonstration Project which will take three to four years.

**National Chemical Laboratory, Pune**

503. SHRI PRAMOD MAHAJAN: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether National Chemical Laboratory, Pune has developed a filter for the elimination of both bacteria and viruses;

(b) if so, the details thereof; and

(c) the steps being taken by Government to promote the new technology and making it available on reduced prices?

THE MINISTER OF SCIENCE AND TECHNOLOGY (SHRI KAPIL SIBAL): (a) and (b) Yes Sir. The National Chemical Laboratory, Pune has developed an ultrafiltration (UF) membrane made from a polymer which does not allow bacteria and viruses such as (Hepatitis 'A & 'E') to pass through. Since the filtration device based on UF membrane enables operation at tap water pressure with an overhead tank, it has been found to be very useful for potable water filters.

The UF membrane technology developed by NCL, has been transferred to an entrepreneur, M/s. Membrane Filters (India) Pvt. Ltd., Pune to develop water filters. A manufacturing facility has been set-up for spirally wound membrane and assembly for water filters of different models and sizes, including a hand pump operated system capable of delivering over 125 litres/hour of potable water.

The household module is 30 cm long with 6.5 cm diameter; while a longer one (1 m long with the same diameter) is suitable for community applications. The water filtration rate for 30 cm module is 1 lit/min. and 3 lit/min. at 1 bar pressure for community module. Average life of the membrane is estimated to be 3 years and cost of filtration is reported to be 5-7 paise per litre of pure water.

The invention has been patented in India and abroad.

(c) Department of Science and Technology through its rural technology division is promoting the installation of these membrane filters in rural areas at a subsidized cost, it is also being done under the project sponsored by Department of Drinking Water Supply under the Rajiv Gandhi National Drinking Water Mission. The Government has also provided forty units of water filter to NGOs in different parts of the country for their dissemination.